

WHAT IS CLAIMED IS:

1. A recording method comprising a step of providing an ink from a recording head to a recording medium through a gap provided between the recording head
5 and the recording medium, the ink being supplied to the recording head from an ink tank comprising an ink contact member and the ink contacting with the ink contact member, wherein the ink comprises
 - (i) a fluorecent coloring material;
 - 10 (ii) a nonionic surfactant;
 - (iii) a compound which is not compatible to (ii); and
 - (iv) a liquid medium for dissolving or dispersing (i), (ii) and (iii),and wherein the ink contact member comprises at least one
15 compound selected from the group consisting of polyacelate and polyolefin.
2. The method according to Claim 1, wherein the ink
20 contact member is an ink-container.
3. The method according to Claim 1, wherein the ink
contact member is an ink-holding member.
4. The method according to Claim 2, wherein the ink
25 contact member is an ink-container with an ink-holding member located therein.

5. The method according to Claim 1, wherein the step comprises the sub-steps of: ejecting ink droplets from an orifice in response to recording signals with ink-jet method, and

5 conducting recording on the recording medium.

6. The method according to Claim 5, wherein the sub-step for ejecting ink droplets is performed by applying thermal energy to the ink.

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7. The method according to Claim 1, wherein the fluorescent coloring material is water-soluble or hydrophilic.

15 8. The method according to Claim 1, wherein the concentration of the fluorescent coloring material in the ink is equal to or exceeds the concentration thereof exhibiting the maximum fluorescence intensity.

20 9. The method according to Claim 1, wherein the concentration of the fluorescent coloring material in the ink is not more than 1.5% by mass based on total mass of the ink.

25 10. The method according to Claim 1, wherein the fluorescent coloring material is a fluorescent dye.

11. The method according to Claim 1, wherein the nonionic surfactant is a liquid at room temperature.

12. The method according to Claim 1, wherein the
5 nonionic surfactant has an HLB of not more than 13.

13. The method according to Claim 1, wherein the concentration of the nonionic surfactant in the ink is a value causing no phase separation in the ink.

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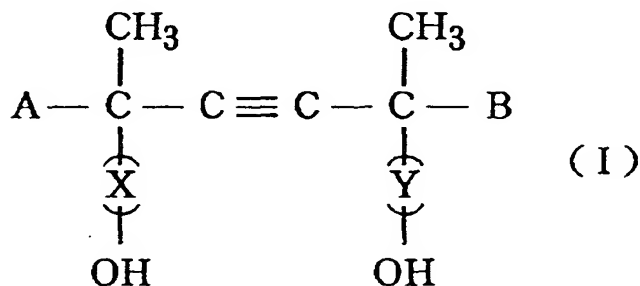
14. The method according to Claim 1, wherein the concentration of the nonionic surfactant in the ink is that does not cause phase separation of the nonionic surfactant even when the ink does not contain the
15 fluorescent coloring material.

15. The method according to Claim 1, wherein the concentration of the nonionic surfactant is contained in an amount not more than 1.0% by mass based on total
20 weight of the ink.

16. The method according to Claim 1, wherein the nonionic surfactant is water-soluble or hydrophilic.

25 17. The method according to Claim 1, wherein the nonionic surfactant has an acetylene group.

18. The method according to Claim 1, wherein the nonionic surfactant has a structure represented by the following formula I:



5 (wherein A and B are independently $\text{C}_n\text{H}_{2n+1}$ (n being an integer of 1 to 10), and X and Y are independently a ring-opened ethylene oxide unit and/or a ring-opened propylene oxide unit.)

10 19. The method according to Claim 1, wherein the solubility parameter of (iii) is not less than 15.

20. The method according to Claim 1 or 4, wherein (iii) is liquid at room temperature.

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21. The method according to Claim 1, wherein (iii) is water-soluble or hydrophilic.

22. The method according to Claim 1, wherein (iii) is
 20 a compound selected from the group consisting of sugar alcohol, sugar alcohol complex and an ethyleneoxide and/or propyleneoxide adduct thereof.

23. The method according to Claim 3 or 4, wherein the ink-holding member is made of polypropylene.

24. The method according to Claims 3 or 4, wherein
5 the ink-holding member is made of a condensed compound.

25. The method according to Claims 3 or 4, wherein the ink-holding member is formed of a fibrous aggregate.

10 26. The method according to Claim 25, wherein the fibrous aggregate is arranged along a direction of discharging the ink.

27. The method according to Claim 4, wherein the ink-
15 holding member has a surface in contact with the ink container.

28. The method according to Claim 1, wherein the ink further comprises a primary alcohol.

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29. The method according to Claim 1, wherein the ink further comprises a non-fluorescent coloring material.

30. The method according to Claim 29, wherein the
25 non-fluorescent coloring material is water-soluble or hydrophilic.

31. The method according to Claim 29, wherein the non-fluorescent coloring material is an azo dye.

32. The method according to Claim 29, wherein a
5 concentration of the non-fluorescent coloring material in the ink is not less than the concentration of fluorescent coloring material.

33. The method according to Claim 1, wherein the ink
10 contains ammonium ions and alkali metal ions.

34. The method according to Claim 1, wherein the ink further comprises at least one selected from urea and derivatives thereof.

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35. The method according to Claim 34, wherein the derivatives include alkyl derivatives of urea and ethyleneoxide adducts of urea and propyleneoxide adducts of urea.

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36. The method according to Claim 1, wherein the surface tension of the ink is not more than 40mN/m (dyne/cm).

25 37. The method according to Claim 1, wherein pH of the ink is not more than 8.

38. An ink-cartridge comprising an aqueous ink and an ink contact member, wherein the ink comprises:

(i) a fluorescent coloring material;

(ii) a nonionic surfactant;

5 (iii) a compound which is not compatible with (ii); and

(iv) a liquid medium for dissolving or dispersing (i),

(ii) and (iii),

wherein the ink contact member comprises at least one compound selected from the group consisting of

10 polyacetate and polyolefin.

39. The ink-cartridge according to Claim 38, wherein the ink contact member is at least one selected from an ink container containing the ink therein and an ink-

15 holding member provided in the ink container together with the ink.

40. The ink-cartridge according to Claim 39, wherein the ink-holding member is porous.

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41. The ink-cartridge according to Claim 39, wherein the ink-holding member has a surface in contact with the ink container.

25 42. The ink-cartridge according to Claim 39, wherein the ink-holding member has a multi-layered structure.

43. The ink-cartridge according to Claim 42, wherein layers constituting the multi-layered structure is arranged along a discharge direction of the ink in the ink container.

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44. The ink-cartridge according to Claim 42, wherein the ink-holding member has a surface in contact with the ink container.

10 45. The ink-cartridge according to Claim 39, wherein the ink-holding member is made of a fibrous aggregate.

46. The ink-cartridge according to Claim 45, wherein the fibrous aggregate is arranged along a discharge
15 direction of the ink in the ink container.

47. The ink-cartridge according to Claim 46, wherein the ink-holding member has a surface in contact with the ink container.

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48. A printing apparatus comprising an ink-cartridge defined by Claim 38 and an ink-jet head for discharging ink and placed in the ink-cartridge.

25 49. An information recording apparatus comprising an ink-cartridge of Claim 38 and an ink-jet head for discharging ink placed in the ink-cartridge.